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ABSTRACT

A listing of 10 basic tasks performed by industrial education teachers, subdivided to the fourth level, comprises the document. The present listing is an expansion of an earlier publication, which terminated subdivision of tasks at the third level; the 327 third level tasks have since been treated in a rather extensive study in which 863 Wisconsin industrial education teachers and a national jury of 165 responded to the importance they attached to the tasks. All 327 tasks were validated as "not unimportant," and were expanded to a fourth level by a study committee applying four criteria to each task: (1) clarity, (2) discreteness, (3) manageability in a teaching-learning situation, (4) probability that competencies for task performance could be developed. (Author/AJ)

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THE INDUSTRIAL EDUCATION TEACHER'S PROFESSIONAL TASKS

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FOREWORD

The Department of Industrial Teacher Education, University of Wisconsin-Stout is charged with the responsibility of providing pre-service and in-service preparation for education personnel in Industrial Arts Education, American Industry, and Vocational-Industrial Educat on. Professional instruction is offered at the bachelor's, master's, and education specialist levels both on-campus, through resident instruction, and off-campus through extended services. Accordingly, it is fitting that our Departmental Competency Study Committee has expanded a task analysis prepared in 1972 and validated by the M.S. Degree Program Committee for Industrial Education. The refinement of sub-tasks bring an additional level of clarity to the listing. With the thought that the list may have value for otners in industrial, technical, vocational education, it is presented to the profession.

E. Robert Rudiger

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TABLE OF CONTENTS AND DEFINITION OF FIRST-LEVEL TASKS

		Page
Forward		ii
Introduction		1
1.0	Improve Individual's Competencies Tasks associated with continual regeneration of the individual's competencies within each domain to maintain relevance to ever-changing problems.	4
2.0	Design Programs Tasks associated with planning programs.	5
3.0	Design Instruction Tasks associated with planning instruction at the course level.	16
4.0	Nurture Humaneness Tasks associated with human interaction to the end of prompting maximum learning, growth, and development of each individual.	27
5.0	Facilitate Learning Tasks involved in the learning act with focus upon the teacher as a facilitator of the learning process.	30
6.0	Manage the Learning Environment Tasks related to providing a physical environment to promote maximum learning, growth, and development.	43
7.0	Provide Professional Service Tasks the teacher does as a service which may not be specifically required of him but which contribute both to his students and to his own growth as a professional.	48
8.0	Utilize Research Tasks of consuming and producing research both of an informal and formal nature as they relate to bringing evidence to bear in a systematic manner on professional and technical problems.	53

TABLE OF CONTENTS AND DEFINITION OF FIRST-LEVEL TASKS continued

		Page
9.0	Evaluate Instruction	58
	Tasks at the instructional level designed to ascertain the extent to which student achievement has taken place and whether course-level goals were reached.	
10.0	Evaluate Programs	61
	Tasks at the program-level designed to ascertain the extent to which program-level objectives were reached.	

INTRODUCTION

In 1972, a listing of tasks performed by Industrial Education teachers was developed at UW-Stout.[1] At the time of its development, an arbitrary decision was made to terminate sub-division of tasks at the third-level in order to make the assignment more manageable. It was realized then that further sub-division would be required. This listing of 327 third-level tasks was treated in a rather extensive study which was completed in August, 1973.[2]

In this study, 863 Wisconsin Industrial Education Teachers responded to the importance they attached to the 327 tasks. A national jury composed of 45 State Consultants in Industrial Arts (or Industrial Education); 43 State Teacher Education officers from the State Departments of Public Instruction; and 77 Leaders in Industrial Education or Education; responded to the importance they perceived should be attached to these same 327 tasks by secondary school industrial education teachers.

After examing some alternative validation schemes, the Industrial Teacher Education Competency Study Committee agreed that:

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[1] M.S. Degree Program Committee for Industrial Education, First-, Second-, and Third-Level Tasks Performed by Industrial Education Teachers, Menomonie, Wisconsin: The Graduate College, University of Wisconsin-Stout, 1972, pp. 18.

[2] Lawrence S. Wright, Development of a Base for the Re-evaluation of the Professional Segment of the Master of Science Degree Program in Industrial Education at University of Wisconsin-Stout, Parts I - VIII, Menomonie, Wisconsin; Graduate College, June - August, 1973.

> The third-level tasks are to be considered a part of the validated list if either the practitioners (teachers) or the jury reported them to be at any level of importance other than unimportant.[3]

All 327 tasks met this criterion and, thus, were retained as the validated list.

The study committee then turned its attention to expanding such parts of the validated list as might provide for an added level of clarity. The following criteria were established for ascertaining whether a third-level task needed sub-dividing:[4]

1. Is its meaning quite clear?
2. Does it seem to be a discrete task?
3. Is it manageable as it stands in a teaching-learning situation?
4. With the addition of "enabling objectives," would it be expected that competencies to perform this task could be developed?

For each of the 327 tasks, any negative response from the study committee in applying these criteria made the task a candidate for dividing and expanding into appropriate sub tasks.

The work was then distributed among the four committee members and a small sampling of the work was assigned each staff member of the Industrial Teacher Education Department. Sub-dividing was completed in May. This work was submitted to the Industrial Teacher Education Department staff during its meeting in July, 1974, and was approved with minor editorial corrections as it is presented here.

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[3] Industrial Teacher Education Competency Study Committee, Minutes, Number 4, Industrial Teacher Education Department, School of Industry and Technology, University of Wisconsin-Stout, Menomonie, Wisconsin, January 24, 1974, page 1.

[4] Industrial Teacher Education Competency Study Committee, Minutes, Number 5, Industrial Teacher Education Department, School of Industry and Technology, UW-Stout, Menomonie, Wisconsin, January 29, 1974, page 1.

It is believed that the generic list we have titled "The Industrial Education Teacher's Professional Tasks" will be of interest to others.

There is much work remaining to be done to re-evaluate and up-grade our departmental offerings so that graduates of our various programs are competent to perform the necessary tasks. Lower division and upper division instruction should provide competent performers for entry level positions in industrial education. Graduate and advanced graduate instruction should provide ability to perform additional tasks, as well as to advance the performance level of tasks which can only be carried to the entry level in the undergraduate programs.

Occasionally reference in this document is made to "Guide" or "The Guide". These references and all referrents to the content or discipline of industrial education are references to:

> The Wisconsin Guide to Local Curriculum Improvement in Industrial Education, K-12, Bulletin No. 3541, Wisconsin Department of Public Instruction, Madison, Wisconsin, 1973, pp. 25.

Our program directors and their committees as well as the members of our Industrial Teacher Education Department, are committed to a cooperative venture to strengthen our instruction, our programs, and our institution toward this end.

The Industrial Teacher Education
Competency Study Committee,
July, 1974

Jim Bensen
Dick Gebhart
Rich Peter
Larry Wright

1.0 IMPROVE INDIVIDUAL'S COMPETENCIES

1.1 Provide for re-generation and development of competencies.

- 1.1.1 Re-generate teaching skills and strategies.
- 1.1.2 Improve your technical skills.
- 1.1.3 Independently accept and solve technical and other problems related to teaching assignments.
- 1.1.4 Accept professional assignments.
- 1.1.5 Improve skills of interaction with others.

1.2 Keep up with developments in the field.

- 1.2.1 Attend in-service seminars and workshops.
- 1.2.2 Read current professional literature for self-improvement.
- 1.2.3 Pursue further formal technical and professional education for self-improvement.
- 1.2.4 Maintain membership in professional and technical organizations.
- 1.2.5 Visit industries and consult with professional and technical personnel.
- 1.2.6 Subscribe to educational and technical journals.

1.3 Use self-evaluation techniques.

- 1.3.1 Select a teaching position for which you feel qualified.
- 1.3.2 Participate in self-evaluation techniques.
- 1.3.3 Consult supervisory and administrative evaluations for self-improvement.
- 1.3.4 Periodically, self-reflect and evaluate education and life philosophies.

2.0 DESIGN PROGRAMS

2.1 Study society in general and its problems in particular to maintain and improve the relevance of industrial education goals to society.

- 2.1.1 Read and interpret current and historical literature for program level input.
- 2.1.2 Listen to and interact with presentations about the current status and the future as input to program-level curriculum development.
- 2.1.3 Make judgements about cause and effect in relating societal problems to industrial education programs.
- 2.1.4 Project trends and make predictions based on societies' problems and needs for program-level curriculum development.
- 2.1.5 Relate current problems to industrial education programs.
- 2.1.6 Identify contributions that industrial education can make toward the solution of societal problems.
- 2.1.7 Consider alternative solutions to societal problems at the program planning level.
- 2.1.8 Try promising approaches and alternatives to meeting the needs of society through industrial education programs.
- 2.1.9 Establish tentative program-level goals for industrial education in relation to societal needs (See 2.4.1).
- 2.1.10 Suggest program-level improvements in industrial education based on societal needs.

2.2 Study technology and the institution of industry within our society as a source of the body of knowledge for industrial education.

- 2.2.1 Read magazines and journals that focus on industry as a part of the study of the institution of industry.
- 2.2.2 Decide upon basic functions of industry to be studied in the program.
  - 2.2.2.1 Review and identify basic functions which can be studied.
  - 2.2.2.2 Select those functions which are appropriate for meeting program-level objectives.

2.2.3 Visit and observe representative industries as a source of the body of content for industrial education.

2.2.3.1 Identify representative industries in the locality that can be visited.

2.2.3.2 Plan visitation to industry.

2.2.3.3 Visit industry.

2.2.3.4 Synthesize the observations of the industrial visit.

2.2.4 Consult available industrial personnel as part of the study of the institution of industry.

2.2.4.1 Identify available industrial personnel who can enrich the program.

2.2.4.2 Plan for the consultation with industrial personnel.

2.2.4.3 Consult with industrial personnel.

2.2.4.4 Synthesize the results of the consultation with industrial personnel.

2.2.5 Develop and maintain an up-to-date industrial resource file

2.2.6 Identify past, present and probable future impacts of industry on society.

2.2.6.1 Examine historical aspects of interaction between industry and society.

2.2.6.2 Determine present impacts resulting from the interaction between industry and society.

2.2.6.3 Project probable future impacts resulting from the interaction between industry and society.

2.2.7 Study labor in industry as a basis for program-level curriculum development.

2.2.7.1 Identify representatives of labor in industry.

2.2.7.2 Obtain input from representatives of labor in industry.

2.2.7.3 Synthesize and integrate the input obtained from the study of labor into program-level objectives.

2.2.8 Select published taxonomy or develop a taxonomy of industry.

2.2.8.1 Identify various taxonomies of industry.

2.2.8.2 Evaluate the potential of each taxonomy for suggesting teachable content.

2.2.8.3 Select most appropriate taxonomy of industry, or,

2.2.8.4 Develop a taxonomy of industry which contains: a logical structure, discrete elements and teachable content.

2.2.9 Establish tentative program-level goals for industrial education in relation to industry.

2.3 Study group cultures and principles of learning in order to relate instruction to the individuals for whom the program and instruction is being planned.

2.3.1 Identify various group cultures that may compose target populations for programs.

2.3.1.1 Identify group cultures based on economic differences.

2.3.1.2 Identify group cultures based on ethnic differences.

2.3.1.3 Identify group cultures based on racial differences.

2.3.1.4 Identify cross-cultural groups based upon unique "social-mixes."

2.3.2 Examine the characteristics of group cultures to improve understanding of attitudes, needs, and interests of those making up the culture for program-level input.

2.3.3 Identify appropriate learning principles for target populations at the program level.

2.3.3.1 Identify unique cultural characteristics that may require differing learning principles.

2.3.3.2 Identify the learning principle that is most appropriate for the population being served.

2.4 Analyze the study of society, industry, and the individual to identify the problems and human needs toward which industrial education can make contributions.

2.4.1 Identify societal, industrial and individual problems toward which industrial education can contribute.

2.4.1.1 Study dynamic societal situations to determine its needs.

2.4.1.1.1 Identify societal problems as a result of supply and demand situations.

2.4.1.1.2 Identify societal problems as a result of situations arising from the assets of industry.

2.4.1.1.3 Identify societal problems as a result of where industry locates.

2.4.1.1.4 Identify societal problems as a result of industry's dependence on human resources.

2.4.1.1.5 Identify societal problems arising from the financial interdependency of industry and society.

2.4.1.1.6 Identify societal problems from maintaining a balance in the environment that industry operates.

2.4.1.1.7 Identify societal problems arising from situations concerning the profit factor of industry.

2.4.1.2 Study the elements of industry to determine its needs. (See Guide)

2.4.1.2.1 Study industrial systems to determine needs.

2.4.1.2.2 Study industrial resources to determine needs.

2.4.1.2.3 Study the coordinating elements of industry to determine needs.

2.4.1.3 Study the individual to determine his/her needs.

2.4.1.3.1 Determine the interests of the individual.

2.4.1.3.2 Determine the needs of the individual.

2.4.2 Identify human needs - including those of differing cultures.

2.4.2.1 Identify physical needs of humans.

2.4.2.2 Identify psychological needs of humans.

2.4.2.3 Identify intellectual needs of humans.

2.4.2.4 Identify social-interaction needs of humans.

2.4.3 Examine previously proposed solutions and use, or propose solutions to problems and ways to meet human needs through the program.

2.4.3.1 Review the literature and related research.

2.4.3.2 Observe present practices in parallel programs.

2.4.3.3 Discuss action that may be elected with experts in the field.

2.4.3.4 Propose solutions to problems to meet human needs.

2.4.4 Identify the jobs that need to be done toward which an industrial education program can contribute.

2.4.4.1 Identify the job title.

2.4.4.2 Write or secure a job description.

2.4.5 Detail each job to be done in industrial education in terms of tasks to be performed for program-level curriculum development.

2.4.5.1 Complete the task analysis.

2.4.5.2 Validate the task analysis.

2.4.6 Structure the content from which to draw for program-level curriculum development.

2.4.6.1 Structure content using a conceptual analysis.

2.4.6.2 Structure content using a behavior analysis.

2.5 Develop new and existing programs in terms of expected task outcomes.

2.5.1 Develop program-level rationale(s).

2.5.1.1 Adopt, adapt, or write program-level rationale.

2.5.1.1.1 Adopt an existing rationale (e.g., State Guide).

2.5.1.1.2 Adapt an existing rationale to local needs.

2.5.1.1.3 Write a new rationale to meet local needs.

2.5.1.2 Validate the program rationale.

2.5.1.2.1 Submit rationale to local advisory committee.

2.5.1.2.2 Submit rationale to a jury of experts.

2.5.1.2.3 Make validation decision based on responses received.

2.5.2 Develop program-level mission statement(s).

2.5.2.1 State the title of the program.

2.5.2.2 Write a statement of "who is to be served."

2.5.2.3 Write an output statement in terms of what the program is to accomplish.

2.5.2.4 State the general level(s) at which the program will function.

2.5.2.5 State where and under what conditions the program will operate.

2.5.3 Develop program-level objectives.

2.5.3.1 Adopt existing program-level objectives (e.g., State Guide).

2.5.3.2 Write program-level objectives consistent with the program rationale and mission statement.

2.5.4 Establish criteria for selection of tasks for education and training programs.

2.5.4.1 Establish criteria to indicate validity of tasks in relation to the program rationale.

2.5.4.2 Establish criteria to monitor the appropriateness of tasks to the needs and abilities of the learner.

2.5.4.3 Establish criteria relating to the time-line available to accomplish the tasks.

2.5.5 Select tasks for which education and training are to be provided in the industrial education program(s).

2.5.6 Correlate the industrial education program as a sub-system of the total educational program.

2.5.6.1 Establish the program as a viable and dynamic part of the total school system.

2.5.6.2 Develop the program inter-relationships to other program sub-systems that when combined, contribute to the total school system.

2.6 Collect tasks into appropriate instructional groups for teaching (e.g., courses, units, and the like.)

2.6.1 Identify student populations to be served as a basis for determining program experiences.

2.6.1.1 Analyze the make-up of the student community.

2.6.1.2 Determine student(s) level to which program experiences will be pitched.

2.6.2 Develop rationale for courses(s) consistent with program-level rationale.

2.6.2.1 Develop course-level rationale.

2.6.2.2 Evaluate course-level rationale for consistency with program-level rationale.

2.6.2.3 Make needed changes in course-level rationale.

2.6.3 Develop mission statement for courses(s).

2.6.3.1 State the course name and number.

2.6.3.2 Write a statement of "who is to be prepared."

2.6.3.3 Write an output statement in terms of what is to be done.

2.6.3.4 State the level of qualification required in the output.

2.6.3.5 Explain where and under what conditions the course will be presented.

2.6.4 Develop objectives for courses(s) consistent with program-level objectives.

2.6.4.1 Review the output component in the mission statement.

2.6.4.2 Develop the output component in behavioral form.

2.6.4.3 Select from the task-listing those tasks that fall under each course-level objectives.

2.6.4.4 Re-order these tasks into appropriate instructional groupings for teaching the course.

2.7 Develop a plan for continual revision and improvement of programs.

2.7.1 Plan for student evaluation of courses and programs.

2.7.1.1 Develop an instrument to determine extent to which students have achieved course objectives.

2.7.1.2 Develop an instrument to determine extent to which students have achieved program objectives.

2.7.1.3 Develop an instrument to determine change of student attitude toward courses.

2.7.1.4 Develop an instrument to determine change of student attitude toward program.

2.7.1.5 Plan a schedule for administration and evaluation of achievement and attitude instruments.

2.7.2 Consult with industrial and educational advisory committee.

2.7.2.1 Identify criteria for committee member selection.

2.7.2.2 Select committee members.

2.7.2.3 Plan to obtain input from advisory committee members.

2.7.2.4 Plan for both retirement of committee members and addition of new committee members.

2.7.3 Keep up with new literature related to general and industrial education for program improvement.

2.7.4 Maintain a program-level instruction evaluation log book.

2.7.5 Prepare follow-up studies of graduates of the program.

2.7.5.1 Prepare instruments and a schedule for obtaining data from graduates.

2.7.5.2 Prepare instruments and a schedule for obtaining data from supervisors of graduates.

2.8 Develop implementation strategies for new programs and changes in existing programs.

2.8.1 Establish curriculum implementation practices and sequence to move progressively from the existing system, through phases, into the planned system.

2.8.1.1 Determine precisely what the present curriculum practices are.

2.8.1.2 Determine precisely what the new curriculum practices are to be.

2.8.1.3 Select strategies and sequence these to move progressively from "what is" to "what should be."

2.8.2 Read current literature on educational change and change strategy.

2.8.3 Re-examine the rationale and fully develop the reasons (advantages) for making the proposed changes.

2.8.3.1 Re-examine the rationale and make any needed modifications.

2.8.3.2 Anticipate objections that may be raised and study alternatives.

2.8.3.3 Develop a clear, but concise, list of advantages for the proposal.

2.8.4 Consider the cultural values and past experiences of those persons who are supposed to make the change so that it is compatible to these values and experiences.

2.8.4.1 Identify the change agents and clients who will need to undergo change.

2.8.4.2 Analyze the cultural values and past experiences of those who are to undergo change.

2.8.4.3 Modify the proposal for change so that it seems to be compatible with values and experiences.

2.8.4.4 Involve those who are to undergo change in an introductory interaction session with respect to the proposed change.

2.8.4.5 Make further modifications in the change proposal if needed.

2.8.5 Identify "opinion leaders" and enlist their support of proposed changes at the program level.

2.8.5.1 Study the organizational structure to identify "opinion leaders".

2.8.5.2 Develop a strategy for enlisting the support of "opinion leaders".

2.8.5.3 Implement the strategy for obtaining the support of "opinion leaders".

2.8.6 Plan an educational program for those who will implement the change so that the program and its ramifications are clearly understood.

2.8.6.1 Select those who will be the change agents.

2.8.6.2 Develop a program of education for the change agents.

2.8.6.3 Implement the program of education for the change agents.

2.8.7 Plan an education program for the consumers of changes so that they may see the value of the change.

2.8.7.1 Plan the program for the clients.

2.8.7.2 Implement the proposed change(s).

2.8.8 Develop alternate change strategies for program implementation.

2.8.9 Establish timetable for program change implementation.

2.8.10 Prepare budget for proposed changes.

2.8.11 Evaluate the effect of planned change on other curriculum areas and on the total curriculum.

3.0 DESIGN INSTRUCTION

3.1 Write performance objectives for each course.

3.1.1 Identify student population who will receive instruction.

3.1.1.1 Identify characteristics of the student population.

3.1.1.2 Identify the competencies students bring to this task.

3.1.1.3 Consider articulation of other experiences in the sequence.

3.1.2 Identify student behavior or product of student behavior.

3.1.2.1 Identify behavior that is observable.

3.1.2.2 Identify the product of student behavior.

3.1.3 Identify conditions under which student behavior modification will take place.

3.1.3.1 Identify what is given in the situation under which achievement will be observed.

3.1.3.2 Identify what is allowed in the situation under which achievement will be observed.

3.1.3.3 Identify any restrictions in the situation under which achievement will be observed.

3.1.4 Identify performance standard for performance objectives.

3.1.4.1 Identify quantitive performance standards.

3.1.4.2 Identify qualitative performance standards.

3.1.4.3 Identify the desirable level of confidence in performance.

3.1.5 Write the performance objective at the appropriate level and domain.

3.1.5.1 Write performance objectives for appropriate levels of the cognitive domain.

3.1.5.2 Write performance objectives for appropriate levels of the affective domain.

3.1.5.3 Write performance objectives for appropriate levels of the psychomotor domain.

3.2 Organize objectives into appropriate sequences.

3.2.1 Identify which objectives are dependent on other objectives for their attainment.

3.2.1.1 Classify objectives on the basis of their dependence upon each other.

3.2.1.2 Group classified objectives in systematic order.

3.2.2 Group and sequence performance objectives into appropriate units of instruction.

3.2.2.1 Identify units of instruction into which performance objectives may be grouped.

3.2.2.2 Group performance objectives into units selected.

3.2.2.3 Sequence performance objectives into appropriate orders within the units.

3.3 Validate content against domains and against levels within domains.

3.3.1 Decide whether each domain should be represented and the balance of content which should be devoted to each.

3.3.1.1 Make a judgement about whether cognitive content should be included.

3.3.1.2 Make a judgement about whether affective content should be included.

3.3.1.3 Make a judgement about whether psychomotor content should be included.

3.3.1.4 Make a judgement about the desired distribution of content among the domains to be included.

3.3.2 Observe that the desired domains are represented and what their balance is.

3.3.3 Make adjustments to content within domains to obtain needed balance.

3.3.4 Decide which levels within each domain should be represented and the balance of content that should be devoted to each.

3.3.4.1 Make a judgement about which levels of the cognitive domain should be included.

3.3.4.2 Make a judgement about which levels of the affective domain should be included.

3.3.4.3 Make a judgement about which levels of the psychomotor domain should be included.

3.3.4.4 Make a judgement about the desired distribution of content among levels within each domain.

3.3.5 Observe whether the desired levels within domains are represented and what their balance is.

3.3.6 Make any needed adjustments to content by levels within each domain.

3.4 Develop (or identify) student learning activities appropriate to each behavioral objective (make the content operational).

3.4.1 Consult resources to identify learning activities.

3.4.1.1 Analyze the array of learning activities available.

3.4.1.2 Consider the appropriateness of the learning activity in relationship to the behavioral objective.

3.4.1.3 Identify learning activities commensurate with the level of objectives.

3.4.2 Plan experiences which will contribute to the students understanding of industry as a major element of their culture.

3.4.2.1 Plan experiences for students related to understanding industry through the functions involved in producing goods and services in light of industry being a major element of their culture.

3.4.2.1.1 Plan experiences which relate the systems elements of industry to the production of goods and services.

3.4.2.1.2 Plan experiences which identify the relationships of human and natural resources as the means of supplying the needs of industry in their production of goods and services.

3.4.2.1.3 Plan experiences which permit students to examine the elements of industry utilized in coordinating or bring resources together so that production of goods and services can take place.

3.4.2.2 Plan experiences for students which will aid them in understanding the inter-dependence of society and industry when viewed as a major element of their culture.

3.4.2.2.1 Plan experiences which relate the systems elements of industry to gaining understanding of the inter-dependence of society and industry.

3.4.2.2.2 Plan experiences which idenify the relationships of industry's needs (human and natural) to society as a whole.

3.4.2.2.3 Plan experiences which permit students to examine the assembling and coordinating of resources for production; then, relating industry to society with respect to their inter-dependence.

3.4.2.3 Plan experiences for students in exploring the context in which industry has developed and continues to develop with respect to its effect on the culture.

3.4.2.3.1 Plan experiences which relate the systems elements of industry to gaining an understanding of how industry has developed and continues to develop.

3.4.2.3.2 Plan experiences which identify the human and natural resource needs of industry as they relate to the way industry has developed and continues to develop.

3.4.2.3.3 Plan experiences which permit students to examine the elements of industry, used in assembling and coordinating resources for production as related to past and present development of industry.

3.4.3 Plan exploratory experiences related to industry which will provide some students a base for occupational choice and all students a respect for the pursuits of others.

3.4.3.1 Plan a variety of learning activities which will develop self-awareness.

3.4.3.1.1 Identify a variety of learning activities in industrial systems.

3.4.3.1.2 Identify a variety of learning activities in industrial coordination.

3.4.3.2 Plan a variety of learning activities which will develop career-awareness.

3.4.3.2.1 Identify a variety of learning activities in industrial systems.

3.4.3.2.2 Identify a variety of learning activities in industrial coordination.

3.4.3.3 Plan a variety of learning activities which will permit career exploration.

3.4.3.3.1 Identify a variety of learning activities in industrial systems.

3.4.3.3.2 Identify a variety of learning activities in industrial coordination.

3.4.4 Plan experiences for some students which will prepare them for entry into industrially related occupations or to develop a base for advanced occupational education.

3.4.4.1 Plan technical experiences as identified by a selected task analysis of related industrial occupations.

3.4.4.1.1 Plan experiences in industrial research and development.

3.4.4.1.2 Plan experiences in industrial production.

3.4.4.1.3 Plan experiences in marketing and distribution.

3.4.4.1.4 Plan experiences in the maintenance and service of equipment and property and services for people.

3.4.4.1.5 Plan experiences in industrial management.

3.4.4.1.6 Plan experiences in industrial communications.

3.4.4.2 Plan human relationship experiences as identified by a selected task analysis of related industrial occupations.

3.4.4.2.1 Plan experiences in relating to individuals and groups at various levels within an industry and with the general public.

3.4.4.2.2 Plan experiences in relating to supervisory personnel and peers.

3.4.4.2.3 Plan experiences in relating to management and labor.

3.4.4.2.4 Plan experiences in relating to consumers, transporters, and service personnel.

3.4.5 Plan experiences which some students may use as a base for developing avocational activities.

3.4.5.1 Identify areas of course content which may stimulate avocational interests and activities.

3.4.5.2 Capitalize on students' interests.

3.4.5.3 Plan quest activities with sufficient flexibility to accommodate personal interests.

3.4.5.4 Plan opportunities for students to share avocational interests with others.

3.4.5.5 Identify resources and personal contacts which may contribute to the development of avocational activities.

3.4.6 Plan activities which will contribute to teaching students how to use processes; e.g., perceiving, communicating, learning, decision-making, organizing, co-responding, creating, valuing, problem solving.

3.4.6.1 Plan a variety of process learning activities exemplifying industrial systems.

3.4.6.2 Plan a variety of process learning activities exemplifying industrial resources.

3.4.6.3 Plan a variety of process learning activities exemplifying industrial coordination.

3.4.7 Develop alternative learning activities to provide for individual student needs.

3.4.7.1 Develop activities to accommodate differing learning styles.

3.4.7.2 Develop activities to accommodate different rates of learning.

3.4.7.3 Develop alternative learning activities to accommodate differing learning objectives.

3.5 Select teaching activities and strategies.

3.5.1 Plan strategies for teaching, including meeting the needs of special groups.

3.5.1.1 Identify delivery systems which will accommodate differing learning styles.

3.5.1.2 Select delivery systems to meet student needs.

3.5.1.3 Organize teaching activities to meet scope and sequence requirements of units of instruction.

3.5.2 Integrate learning and teaching activities into instructional plans.

3.5.3 Made decisions concerning the extent to which the instruction is to be individualized.

3.5.3.1 Evaluate various strategies for individualizing instruction.

3.5.3.2 Select most appropriate strategy for implementation into instructional plans.

3.6 Identify and prepare instructional resources.

3.6.1 Review and select personnel resources.

3.6.1.1 Identify guest personnel to enrich planned instruction.

3.6.1.2 Select personnel to meet objectives.

3.6.2 Review and select industrial resources.

3.6.2.1 Identify industrial resources.

3.6.2.1.1 Identify sources of instructional materials.

3.6.2.1.2 Identify industries for field trips.

3.6.2.1.3 Identify sources of tools and equipment.

3.6.2.1.4 Identify sources of industrial resources.

3.6.2.1.5 Identify sources of finance.

3.6.2.2 Select appropriate resources to meet objectives.

3.6.3 Review and select audio-visual resources.

3.6.3.1 Identify audio-visual resources.

3.6.3.2 Select audio-visual resources to meet objectives.

3.6.4 Review and select written resources for instruction.

3.6.4.1 Identify written resources for instruction.

3.6.4.2 Select written resources for instruction.

3.6.5 Prepare instructional materials.

3.7 Develop a strategy for evaluating instruction.

3.7.1 Decide whether evaluation will employ norm-based or criterion-based grading procedures.

3.7.1.1 Review the implications of norm-based grading.

3.7.1.2 Review the procedures for implementing norm-based grading.

3.7.1.3 Review the implications of criterion-based evaluation.

3.7.1.4 Review the procedures for implementing criterion-based grading.

3.7.1.5 Select the grading procedure to be used.

3.7.2 Formulate a grading policy and plans for making it known to students.

3.7.2.1 Review grading policies.

3.7.2.2 Formulate the grading policy and put in writing.

3.7.2.3 Consider alternative ways of familiarizing students with grading policy.

3.7.2.4 Make students aware of grading policy.

3.7.3 Plan for self-evaluation techniques to be used by students.

3.7.3.1 Identify ways the students could evaluate themselves.

3.7.3.2 Solicit student input for self-evaluation.

3.7.3.3 Acquaint students with self-evaluation techniques to be used.

3.7.4 Plan for written and manipulative performance tests.

3.7.4.1 Review the uses of the various forms of written tests.

3.7.4.1.1 Identify appropriate written test forms.

3.7.4.1.2 Select written test(s).

3.7.4.1.3 Prepare a plan for administering written tests.

3.7.4.2 Review the uses of the various forms of testing manipulative performance.

3.7.4.2.1 Identify appropriate manipulative performance test forms.

3.7.4.2.2 Select performance test(s).

3.7.4.2.3 Prepare a plan for administering manipulative performance tests.

3.7.5 Plan for student evaluation of course.

3.7.5.1 Identify several ways the students could evaluate the course.

3.7.5.2 Solicit input from students in considering a plan for course evaluation.

3.7.5.3 Prepare a plan for evaluating courses.

3.8 Organize and complete the course of study.

3.8.1 Write introduction to course of study.

3.8.1.1 Complete title page.

3.8.1.2 Develop a table of contents.

3.8.1.3 Describe the situation in which the course is taught.

3.8.1.4 State the rationale for the course.

3.8.1.5 State the broad course objectives.

3.8.2 Write course description.

3.8.2.1 Include the title of the course.

3.8.2.2 Identify the course code.

3.8.2.3 List the credits awarded for successful completion.

3.8.2.4 List the pre-requisites to the course.

3.8.2.5 Describe the course in a short concise statement.

3.8.3 Prepare a time-range plan suggesting a range of time allotted to each unit of instruction.

3.8.3.1 Determine the scope of the course.

3.8.3.1.1 Identify each unit of instruction.

3.8.3.1.2 Designate the amount of time each unit is allotted.

3.8.3.2 Determine the sequence of the instruction.

3.8.3.3 Organize the instruction to fit the desired delivery system(s) utilized in the course.

3.8.3.4 Write up the instruction in the final, acceptable form.

3.8.4 Arrange for the preparation of total course-of-study copy and subsequent distribution.

3.8.4.1 Arrange for typing copy in an acceptable final form.

3.8.4.2 Distribute copies of the course to appropriate people and agencies.

3.9 Prepare lesson plans for group and individualized instruction.

3.9.1 Write objectives for the lesson.

3.9.1.1 Consider basis for content.

3.9.1.2 Write measurable objectives.

3.9.2 Identify and select learning activities for students.

3.9.2.1 Consider student background.

3.9.2.2 Consider physical facilities.

3.9.2.3 Identify activities appropriate to the objectives being taught.

3.9.2.4 Select activities appropriate to level of students.

3.9.3 Identify and select appropriate teacher activities.

3.9.3.1 Consider the background of the teacher.

3.9.3.2 Consider the physical facilities.

3.9.3.3 Select activities suitable to the teacher's talents.

3.9.3.4 Select activities suitable to the facilities available.

3.9.3.5 Select activities appropriate to the level of objectives being taught.

3.9.3.6 Select logical sequence of happenings in daily routine.

3.9.4 Identify and select appropriate learning resources.

3.9.4.1 Analyze the basic objective of the learning.

3.9.4.2 Identify resources to be used.

3.9.5 Validate objectives against levels within domains for the lessons.

3.9.5.1 Determine the domain for which the objectives are appropriate.

3.9.5.2 Determine the taxonomical level of the objectives.

3.9.6 Keep records of lessons planned and suggestions for improvement.

3.9.7 Sequence presentation of instructional materials.

4.0 NURTURE HUMANENESS

4.1 Nurture humaneness with students. (See also: 6.5)

4.1.1 Encourage students to think of alternatives and to recognize knowledge as imperfect, incomplete, and tentative.

4.1.2 Admit that teachers also make mistakes and learn from them.

4.1.3 Maintain atmosphere where adventure in learning is encouraged without fear of consequences of failure.

4.1.4 Encourage, recognize, and acknowledge original ideas of students--even though imperfect and unfinished.

4.1.5 Take time to listen to students and acknowledge their ideas and commitments as being worthy of expression.

4.1.6 Help students interpret their relationship to their environment.

4.1.7 De-emphasize inter-student competition in the classroom as a basis for student achievement.

4.1.8 Develop group and team learning situations to foster in students a mutual concern for one another.

4.1.9 Encourage students to know that they are respected as individuals.

4.1.10 Provide personal guidance to students.

4.1.11 Extend the positive student-teacher relationship to include informal contacts.

4.2 Nurture humaneness with the school staff.

4.2.1 Accept assistance from, and give assistance to fellow staff members.

4.2.1.1 Be aware of professional contributions other staff members can make.

4.2.1.2 Make a positive effort to involve other staff members to take advantage of professional contributions they can make.

4.2.1.3 Be aware of professional contributions that you might make to other staff members.

4.2.1.4 Maintain a willingness to assist other staff members with professional contributions you might make.

4.2.2 Obtain and lend assistance to school projects being developed by other staff members.

4.2.2.1 Make an effort to know what major school projects other staff members are developing.

4.2.2.2 Offer to support and lend assistance to school projects where you can contribute.

4.2.3 Participate in school staff social events.

4.2.3.1 Know what major school social events are scheduled.

4.2.3.2 Plan to attend selected social events.

4.2.4 Serve on and cooperate with school staff committees.

4.2.4.1 Plan to serve on a reasonable number of school staff committees.

4.2.4.2 Cooperate with requests of authorized school staff committees.

4.2.5 Employ tact and judgement in interacting with other school staff members.

4.2.5.1 Get to know other staff members.

4.2.5.2 Make use of the knowledge of others as you interact with them.

4.2.6 Offer recommendations in matters of school policy.

4.2.6.1 Know what school policy is.

4.2.6.2 Offer recommendations through appropriate channels.

4.3 Nurture humaneness with parents and community.

4.3.1 Participate in community activities and service organizations.

4.3.1.1 Identify areas of personal interests.

4.3.1.2 Become familiar with the objectives of selected community groups by attending meetings.

4.3.1.3 Offer assistance to selected groups needing help.

4.3.2 Evidence interest in graduated students.

4.3.2.1 Study the careers followed by graduates.

4.3.2.2 Provide suggestions pertaining to students' careers in relation to formal schooling.

4.3.3 Participate in parent-teacher functions.

4.3.4 Make provisions for personal contacts with parents concerning the progress of their children.

4.3.4.1 Study the socio-economic characteristics of the community.

4.3.4.2 Establish an informal procedure for meeting each parent.

4.3.4.3 Establish a formal procedure for meeting selected parents.

4.3.4.4 Evidence concern for students who have dropped out of school.

4.3.5 Identify and respect goals parents have for their children.

4.3.5.1 Express interest in learning of student goals.

4.3.5.2 Be familiar with a variety of vocations and avocations.

4.3.5.3 Listen to parents' ideas about their children's goals.

4.3.5.4 Extend positive reinformcement to parent-student-teacher developed goals.

4.3.6 Become familiar with services provided by the community (e.g.: public library, museums, other schools, cultural center, etc.)

4.3.7 Work with community service personnel (e.g.: Librarians, social workers, clergy, training schools, etc.) See 4.3.1

4.4 Nurture humaneness to one's self.

4.4.1 Employ teacher traits in balance between those required for individual self-fulfillment and those required for successful teaching.

4.4.2 Re-assess personal objectives and take action to continue growth towards self-actualization.

5.0 FACILITATE LEARNING

5.1 Execute instructional plans and strategies.

5.1.1 Identify individual needs of students.

5.1.1.1 Recognize the psychological differences in students.

5.1.1.2 Recognize the physical differences in students.

5.1.1.3 Recognize the intellectual differences in students.

5.1.1.4 Display insights with respect to the environment in which students live.

5.1.1.5 Differentitate between real and felt needs.

5.1.2 Find out what students expect from the instruction.

5.1.2.1 Review the relationships of this instruction with that in other courses.

5.1.2.2 Solicit information from students regarding the breadth expected in the instruction.

5.1.2.3 Solicit information from students regarding the depth expected.

5.1.3 Make student aware of instructional intent and proposed outcomes of instruction.

5.1.3.1 Review the instructional plan for the student.

5.1.3.2 Provide each student a list of proposed outcomes (competencies) of the course.

5.1.4 Present lessons and related demonstrations.

5.1.4.1 Introduce lesson with objectives.

5.1.4.2 Conduct the lesson.

5.1.4.3 Summarize the lesson.

5.1.4.4 Determine whether the objectives were met.

5.1.5 Be aware of whether students are working safely and take appropriate preventive and corrective measures.

5.1.5.1 Be familiar with the safety practices (including those required by law).

5.1.5.2 Establish safety procedures for each laboratory and classroom.

5.1.5.3 Enforce safety rules.

5.1.5.4 Revise safety procedures to reflect current acceptable procedures.

5.1.6 Use educational resources in executing instructional plans.

5.1.6.1 Develop an indexing system containing resources.

5.1.6.2 Utilize resources appropriate for the learning objectives.

5.1.6.3 Evaluate and revise resources.

5.1.7 Conduct field trips and other outside-class activities. by planning, conducting and evaluating the activity.

5.2 Motivate students.

5.2.1 Determine the entering dispositions of individual students.

5.2.1.1 Be aware of behavior traits which reflect motivational level of students.

5.2.1.2 Study students' records.

5.2.1.3 Observe student behavior.

5.2.1.4 Draw conclusions from observations.

5.2.2 Win students' attention and maintain level of arousal.

5.2.2.1 Use attention getting techniques.

5.2.2.2 Maintain level of arousal.

5.2.3 Vary class routine to prevent monotony and boredom.

5.2.3.1 Provide opportunities for variable group activities.

5.2.3.1.1 Provide for individual activities.

5.2.3.1.2 Provide for small-group activities.

5.2.3.1.3 Provide for large-group activities.

5.2.3.2 Implement rotational student-personnel program.

5.2.3.3 Provide alternate routes for meeting course objectives.

5.2.3.4 Change the pace of instruction.

5.2.4 Recognize and encourage evidences of response to external motivation.

5.2.4.1 Determine types of external motivation which may stimulate positive response in individual students.

5.2.4.2 Recognize evidences of response to external motivation.

5.2.4.2.1 Identify students who appear to be motivated.

5.2.4.2.2 Identify students who lack motivation.

5.2.4.3 Encourage student-response to external motivation.

5.2.5 Recognize and encourage evidence of response to internal motivation.

5.2.5.1 Determine types of internal motivation which may stimulate a positive response in individual students.

5.2.5.2 Recognize evidence of response to internal motivation.

5.2.5.2.1 Identify students who appear to be motivated.

5.2.5.2.2 Identify students who lack motivation.

5.2.5.3 Encourage student response to internal motivation.

5.2.6 Reward student achievement.

5.2.6.1 Provide recognition for student achievement.

5.2.6.1.1 Praise individual efforts.

5.2.6.1.2 Praise group efforts.

5.2.6.2 Maintain records of achievement.

5.2.7 Recognize and react to behavior which merits no reward.

5.2.7.1 Identify behavior which is not to be rewarded.

5.2.7.2 React to behavior which merits no reward.

5.2.8 Provide students immediate feedback to tests.

5.2.8.1 Determine level of achievement.

5.2.8.2 Communicate level of achievement to students.

5.2.8.3 Identify students who need remedial work.

5.2.8.4 Provide remedial work to improve performance.

5.3 Interact with students in a positive manner.

5.3.1 Use processes of perceiving, communicating, knowing, corresponding patterning, decision-making, creating, valuing, problem-solving, and learning in interacting with students.

5.3.1.1 Perceive thoughts, concepts, and beliefs as articulated by others.

5.3.1.2 Communicate verbally and non-verbally in student interactions.

5.3.1.3 Display insights and inter-relationships in discussions.

5.3.1.4 Correspond with others in a stimulating and positive manner.

5.3.1.5 Pattern concepts into meaningful "wholes" while interacting.

5.3.1.6 Make decisions based on logical and scientific thinking.

5.3.1.7 State thoughts and ideas in creative and unusual ways.

5.3.1.8 Express personal values and display tolerance to others when interacting with them.

5.3.1.9 Pose problems and possible alternative solutions in interacting with students.

5.3.1.10 Interact in an open and "free-wheeling" manner with students that will cause the teacher to "learn" while he "teaches".

5.3.2 Establish atmosphere for positive group interaction.

5.3.2.1 Maintain level of attention (interest established in motivation).

5.3.2.2 Reward positive behavior.

5.3.2.3 Encourage student interchange with verbal and non-verbal responses.

5.3.2.4 Maintain a receptive and supportive classroom climate (as measured on a valid interaction scale; e.g., Flanders, Withall, Hughes, and Amidon systems).

5.3.3 Express interest in students.

5.3.4 Make provision for student input into instruction.

5.3.4.1 Initiate student participation in securing their instructional input.

5.3.4.2 Respond affirmatively to students who attempt to provide input on their own.

5.3.5 Plan individualized instruction with students.

5.3.5.1 Plan with students what is to be learned.

5.3.5.2 Plan with students how the learning will take place.

5.3.5.2.1 Capitalize on individual learning styles.

5.3.5.2.2 Accommodate the learning mode through the selection of learning media.

5.3.5.3 Estimate the learning rate that will take place.

5.3.6 Use student interests in planning student activity.

5.3.6.1 Capitalize on existing interests.

5.3.6.2 Encourage development of new interest areas.

5.3.6.3 Make adjustments of learning activities to meet unexpected student interests.

5.3.7 Provide students with clear understandings of what is expected of them and what they can expect from their teacher.

5.3.7.1 Provide students with learning expectations.

5.3.7.1.1 State the outcomes of the educational experience.

5.3.7.1.2 Interpret the outcomes in terms of student expectations.

5.3.7.1.3 Explain the conditions under which they will be expected to perform.

5.3.7.1.4 Describe the level of performance that is expected for each outcome.

5.3.7.2 Provide students with class control expectations.

5.3.7.2.1 Establish the rules and regulations of functioning in the learning environment.

5.3.7.2.2 Explain the expected behaviors in relation to the rules and regulations.

5.3.7.2.3 Describe the role of the teacher in relation to the expected outcomes.

5.3.8 Express enthusiasm for your students and the subject matter.

5.3.8.1 Display a genuine enthusiasm for the students.

5.3.8.2 Express enthusiasm for the subject matter by continously reminding the students of its importance and inter-relationship to society as a whole and to each individual in particular.

5.3.9 Recognize and interact with sub-cultures unique to the student population.

5.3.9.1 Be aware of the unique sub-cultures.

5.3.9.2 Recognize likes and differences in the sub-cultures.

5.3.9.3 Interact in a supportive manner with other sub-cultures.

5.3.10 Demonstrate an attitude of fairness and commitment on issues important to students.

5.3.10.1 Display a fair attitude on all issues.

5.3.10.2 Appear calm under stress conditions caused by crucial issues.

5.3.10.3 Show commitment to a point of view without distortion to the alternatives of the issue.

5.3.11 Use knowledge of students as a basis for positive interaction during instruction.

5.3.11.1 Draw out responses from the student.

5.3.11.2 Re-state awkward responses to put them into the discussion content.

5.3.11.3 Build and restructure the discussion as students provide the input to the concept, attitude, or skill.

5.4 Adjust plans and strategies based on observed feedback from students.

5.4.1 Be sensitive to solicited and unsolicited student feedback.

5.4.1.1 Maintain vigilance in the learning environment to forms of student feedback.

5.4.1.2 Empathize with feedback suggestions of students.

5.4.1.3 Based on observed student feedback, consider modification of teaching plans.

5.4.2 Modify instructional methods in the light of student feedback.

5.4.2.1 Recognize the need to modify methods to meet changing dynamics in the classroom.

5.4.2.2 Demonstrate flexibility in methods used to meet student needs.

5.4.3 Adjust the learning environment (facilities) to provide optimum learning conditions.

5.4.3.1 Recognize characteristics of students which suggest needed adjustment in the learning environment.

5.4.3.2 Apply knowledge of optimal learning conditions to decisions to adjust the learning environment based on observed student feedback.

5.4.4 Revise time allocations for instructional plans and strategies based on student feedback.

5.4.4.1 Recognize inappropriate time allocated.

5.4.4.2 Make decisions based on student feedback to revise selected time allocations.

5.4.5 Recognize and respond to external factors which influence planned instruction.

5.4.5.1 Recognize external factors which influence planned instruction.

5.4.5.2 Respond to external factors which influence planned instruction.

5.4.5.2.1 Utilize emergency procedures when appropriate.

5.4.5.2.2 Retain composure in the face of distractions.

5.4.5.2.3 Maintain classroom control in the face of distractions.

5.4.6 Capitalize on spontaneous student interests.

5.4.6.1 Be vigilant of classroom dynamics which suggest spontaneous student interests.

5.4.6.2 Adjust plans and strategies to selected spontaneous student interests.

5.4.7 Make final decisions on placement of instructional sequences for optimum effectiveness.

5.4.7.1 Re-cast instruction into "most promising sequences."

5.4.7.2 Pilot test the new instructional sequences.

5.4.7.3 Evaluate the effectiveness of alternative placement of instructional sequences.

5.4.7.3.1 Recongnize optimal effectiveness conditions.

5.4.7.3.2 Make the change in instructional sequences which were found to be optimal.

5.4.8 Be sensitive to non-verbal feedback.

5.4.8.1 Be vigilant of non-verbal forms of student feedback.

5.4.8.2 Use non-verbal forms of communications with students.

5.4.8.3 Respond to selected non-verbal communication of student.

5.5 Teach the substantive content of the field.

5.5.1 Provide experiences which will contribute to the students' understanding of industry as a major element of culture.

5.5.1.1 Provide students with experiences related to understanding industry through the functions involved in producing goods and services in light of industry being a major element of culture.

5.5.1.1.1 Provide experiences which relate the systems elements of industry to the production of goods and services.

5.5.1.1.2 Provide experiences which identify the relationships of human and natural resources as the means of supplying the needs of industry in their production of goods and services.

5.5.1.1.3 Provide experiences which permit students to examine the elements of industry utilized in coordinating or bring resources together so that production of goods and services can take place.

5.5.1.2 Provide students with experiences which will aid them in understanding the inter-dependence of society and industry when viewed as a major element of their culture.

5.5.1.2.1 Provide experiences which relate the systems elements of industry to gaining understanding of the inter-dependence of society and industry.

5.5.1.2.2 Provide experiences which identify the relationships between the needs of industry (human and natural) and society as a whole.

5.5.1.2.3 Provide experiences which permit students to examine the assembling and coordinating of resources for production, then relating industry to society with respect to their inter-dependence.

5.5.1.3 Provide students with experiences in exploring the the context in which industry has developed and continues to develop with respect to its affect on our culture.

5.5.1.3.1 Provide experiences which relate the systems elements of industry to gaining an understanding of how industry has developed and continues to develop.

5.5.1.3.2 Provide experiences which identify the human and natural resource needs of industry as they relate to the way industry has developed and continues to develop.

5.5.1.3.3 Provide experiences which permit students to examine the elements of industry, used in assembling and coordinating resources for production as related to past and present development of industry.

5.5.2 Provide exploratory experiences related to industry which will provide some students a basis for selecting an occupation and will provide all students respect for the pursuits of others.

5.5.2.1 Provide experiences which will develop self-awareness in students.

5.5.2.1.1 Provide students experiences in industrial systems.

5.5.2.1.2 Provide students experiences in industrial coordination.

5.5.2.2 Provide experiences which will develop career awareness in students.

5.5.2.2.1 Provide students experiences in industrial systems.

5.5.2.2.2 Provide students experiences in industrial coordination.

5.5.2.3 Provide experiences which will permit career exploration by students.

5.5.2.3.1 Provide students experiences in industrial systems.

5.5.2.3.2 Provide students experiences in industrial coordination.

5.5.3 Provide experiences for some students to prepare them for entry into appropriate industrially-related occupations or to develop a base for advanced occupational education.

5.5.3.1 Provide technical experiences as identified by a selected task analysis of related industrial occupations.

5.5.3.1.1 Provide experiences in industrial research and development.

5.5.3.1.2 Provide experiences in industrial production.

5.5.3.1.3 Provide experiences in marketing & distribution.

5.5.3.1.4 Provide experiences in the maintenance and service of equipment, people, and property.

5.5.3.1.5 Provide experiences in industrial management.

5.5.3.1.6 Provide experiences in industrial communications.

5.5.3.2 Provide human relationship experiences as identified by a selected task analysis of related industrial occupations.

5.5.3.2.1 Provide experiences in relating to individuals and groups at various levels within an industry and with the general public.

5.5.3.2.2 Provide experiences in relating to supervisory personnel and peers.

5.5.3.2.3 Provide experiences in relating to management and labor.

5.5.3.2.4 Provide experiences in relating to consumers, transporters, and service personnel.

5.5.4 Provide experiences which some students may use as a base for developing avocational activities.

5.5.4.1 Encourage "spin-off" interests.

5.5.4.2 Provide quest opportunities with sufficient flexibility to accommodate personal interests.

5.5.4.3 Provide opportunities for students to share their avocational interests with others.

5.5.4.4 Support students in their pursuit of avocational activities through resources and personal contacts.

5.5.5 Provide experiences which contribute to the teaching of students to use processes; e.g., perceiving, communicating, learning, decision-making, organization, co-responding, creating, valuing, problem-solving.

5.5.5.1 Provide process experiences in industrial systems.

5.5.5.2 Provide process experiences in industrial resources.

5.5.5.3 Provide process experiences in industrial coordination.

6.0 MANAGE THE LEARNING ENVIRONMENT

6.1 Plan for and organize the facilities needed for the program.

6.1.1 Identify and develop an industrial education program and the facility to house it.

6.1.1.1 Consider goals of the over-all program (refer to 2.0 Design Programs).

6.1.1.2 Consider courses or other delivery systems (refer to 3.0 Design Instruction, and 5.0 Facilitate Instruction).

6.1.2 Write a program statement for your shop or laboratory.

6.1.2.1 Select new (or review the current) program objectives for your shop or laboratory.

6.1.2.2 Write educational specifications based on the objectives for the program.

6.1.3 Plan layout for effective space utilization to meet program needs.

6.1.3.1 Employ principles of efficient use of space.

6.1.3.2 Employ principles based on safe use of equipment and tools.

6.1.3.3 Employ principles of economy of time for those who will use the tools and the equipment.

6.1.3.4 Employ principles of economy of finances in the layout.

6.1.3.5 Plan the facility.

6.1.3.5.1 Consult standard "planning" references.

6.1.3.5.2 Sketch and/or draw the square footage into an appropriate, scaled, shape arrangment.

6.1.3.5.3 Make scaled cutouts and position on sketch or drawing.

6.1.3.5.4 Validate layout with appropriate supervisors and other teachers.

6.1.3.5.5 Develop a list of physical needs specifications for the architect.

6.1.4 Consult catalogs of industrial and educational supplies for specification of equipment available.

6.1.5 Prepare a list of specific equipment and tools appropriate to program level needs.

6.1.6 Write specifications for equipment and tools.

6.1.7 Make an immediate and long-range plan for acquisition of equipment and tools.

6.1.8 Prepare, submit, and defend requests for tools and equipment.

6.2 Requisition and receive supplies and materials.

6.2.1 Take inventory of supplies and materials.

6.2.1.1 Compare record of inventory in department files with actual supply on hand.

6.2.1.2 Note shortages.

6.2.1.3 Estimate future needs.

6.2.1.4 Establish priorities for replacement of supplies and materials.

6.2.2 Prepare budgets for formal approval.

6.2.2.1 Assess requirements for various laboratories.

6.2.2.2 Review price lists of suppliers.

6.2.2.3 Develop specification sheets with prices for each item.

6.2.2.4 Compile summary of anticipated expenditures.

6.2.3 Order new educational materials and supplies.

6.2.3.1 Submit requests to suppliers.

6.2.3.1.1 Submit requests for bids.

6.2.3.1.2 Sumbit requests for quotes.

6.2.3.1.3 Evaluate bid and/or quote responses.

6.2.3.2 Order "over the counter" materials and supplies.

6.2.3.3 Follow local procedures for submitting purchase orders.

6.2.4 Receive and check-in supplies and materials.

6.2.4.1 Check delivery against purchase order.

6.2.4.2 Initiate back-order procedures if required.

6.2.4.3 Add materials and supplies to inventory.

6.3 Provide for maintenance.

6.3.1 Develop and carry out a routine preventative maintenance schedule.

6.3.1.1 Develop record cards to be used for maintenance schedule.

6.3.1.2 Develop cost sheets for on-going maintenance.

6.3.1.3 Carry out maintenance according to schedule.

6.3.2 Diagnose maintenance problems in tools and equipment.

6.3.3 Provide for maintenance by servicing or referral for service as appropriate.

6.3.3.1 Consult service manuals for maintenance procedures.

6.3.3.2 Carry out maintenance operations where feasible.

6.3.3.3 Establish sources for referral servicing if maintenance is not to be done by the instructor.

6.3.3.4 Organize referral servicing to obtain minimum interruption of instruction while service is being carried out.

6.3.4 Test and adjust tools and equipment prior to returning them to use after maintenance.

6.4 Maintain records and filing systems.

6.4.1 Keep attendance records for each class taught.

6.4.2 Keep student progress records for each class.

6.4.3 Keep equipment and tool inventories.

6.4.4 Keep a record of purchase orders and inventories.

6.4.5 Keep records of student grades for each class taught.

6.4.6 Keep records of federal and state funding programs.

6.4.7 Keep an up-to-date industrial and educational supply catalog file.

6.5 Respond to social-emotional climate. (See also 4.0 Nurture Humaneness and 5.0 Facilitate Learning.)

6.5.1 Identify internal and external causes of discipline problems.

6.5.1.1 Identify internal personal discipline problems.

6.5.1.2 Identify internal group discipline problems.

6.5.1.3 Identify external personal discipline problems.

6.5.1.4 Identify external group discipline problems.

6.5.2 Demonstrate firmness, fairness, and consistency in dealing with discipline problems.

6.5.2.1 Take a stand that demonstrates a firm position on student behavior.

6.5.2.2 Be fair in all situations - even those which tend to elicit a biased teacher-response.

6.5.2.3 Display consistency in dealing with student discipline problems.

6.5.3 Develop alternative strategies for alleviating conditions which cause discipline problems.

6.5.3.1 Develop strategies to alleviate problems caused by gifted students who become frustrated and not challenged.

6.5.3.2 Develop strategies to alleviate problems caused by slow learners who become frustrated and overwhelmed.

6.5.3.3. Develop strategies to alleviate probelms caused by psychological and social conditions that enhance deviant behavior.

6.5.4 Use rewards and punishment to control deviant behavior.

6.5.4.1 Reward positive behavior.

6.5.4.2 Ignore negative behavior if appropriate.

6.5.4.3 Use punishment for negative behavior if appropriate.

6.5.5 Be responsive to human needs of the student.

6.5.5.1 Be sensitive to the needs of the student.

6.5.5.2 Determine how to respond to respective students and situations.

6.5.5.3 Respond to students in a supportive manner.

6.5.6 Use self-evaluation techniques regarding your inter-relationship with students.

6.5.6.1 Provide opportunities for students to evaluate the social emotional climate in the classroom.

6.5.6.2 Interpret the evaluation results.

6.6 Establish physical conditions conducive to learning.

6.6.1 Maintain control of comfortable classrooms and labortories (e.g., temperature, lighting, noise levels and the like).

6.6.2 Take actions to enhance the room interior (e.g., displays, bulletin boards, and the like).

6.6.3 Establish classroom procedures which avoid confusion and provide freedom of movement to students.

6.6.3.1 Organize work stations.

6.6.3.2 Initiate student personnel plans.

6.6.3.3 Provide traffic-flow patterns which reduce congestion.

7.0 PROVIDE PROFESSIONAL SERVICE

7.1 Advise and counsel students.

7.1.1 Provide students with occupational information.

7.1.2 Administer subject matter diagnostic tests.

7.1.3 Recognize potential problems of students.

7.1.4 Hold individual student conferences.

7.1.5 Confer with parents concerning student educational development.

7.1.6 Assist students in developing good study habits.

7.1.7 Work with guidance counselors in assisting students.

7.1.8 Assist students with personal and occupational problems.

7.1.9 Write letters of recommendation.

7.1.10 Assist students in securing and filling out job applicatons.

7.1.11 Involve resource persons and agencies in assisting students.

7.2 Participate in service activities of the educational and civic community.

7.2.1 Serve on and chair school and community committees.

7.2.2 Actively join in local, state, and national education activities.

7.2.3 Initiate and organize special committee service committees as needed.

7.2.4 Participate in school accreditation visits.

7.2.4.1 Serve as assigned in preparation for accreditation visits made to your school.

7.2.4.2 Be prepared to serve as a member of an accreditation visitation team in another school, if asked to do so.

7.3 Assist in general school duties.

7.3.1 Assist new teachers in the system to understand policies, regulations, and social functions of the school.

7.3.2 Participate in non-instructional school duties.

7.3.3 Serve as class advisor.

7.3.4 Sponsor student club activities.

7.4 Offer professional advice.

7.4.1 Make laboratory and facility planning suggestions.

7.4.1.1 Recognize the various types of laboratories being used in the field.

7.4.1.1.1 Maintain a repertoire of equipment needed for various types of laboratories.

7.4.1.1.2 Be aware of current equipment costs and sources.

7.4.1.1.3 Identify equipment needed to fulfill various classroom activities.

7.4.1.1.4 Make suggestions for laboratory equipment based upon program needs and ability to finance.

7.4.1.2 Recongize the various facility confirgurations feasible for industrial education use.

7.4.1.2.1 Be aware of current building costs.

7.4.1.2.2 Identify relationships of all facilities in the school.

7.4.1.2.3 Relate facility to future requirements.

7.4.1.2.4 Make facility suggestions based upon program needs and ability to finance.

7.4.2 Suggest program and instruction improvements.

7.4.2.1 Recognize contemporary and innovative industrial education programs.

7.4.2.1.1 Be aware of articulation techniques.

7.4.2.1.2 Identify needs.

7.4.2.1.3 Make program suggestions based upon needs.

7.4.2.2 Recognize contemporary and innovative instructional techniques.

7.4.2.2.1 Formulate instructional techniques for various types of students and groups of students.

7.4.2.2.2 Suggest instructional improvements for various types of students and groups of students.

7.4.3 Relate to administrators and school board to keep them informed of trends and new developments.

7.4.3.1 Work with industrial education administrators in providing administrators with information on current trends in industrial education.

7.4.3.2 Attend meetings related to school curricula.

7.4.3.3 Offer information pertaining to current trends in industrial education.

7.5 Develop programs of professional service.

7.5.1 Organize and conduct workshops and in-service educational programs.

7.5.2 Develop adult evening extension programs.

7.5.2.1 Assess adult needs.

7.5.2.2 Develop instructional plans to meet needs.

7.5.3 Initiate remedial and summer (enrichment) programs for students.

7.5.3.1 Identify student needs.

7.5.3.2 Select learning experiences to meet remedial needs.

7.5.3.3 Select learning experiences to meet enrichment program needs.

7.5.3.4 Implement remedial and enrichment program plans.

7.5.4 Serve as advisor to educational suppliers in suggesting and developing of new resources and instructional materials.

7.6 Contribute to literature of the field through technical and/or professional writing.

7.6.1 Write proposals appropriate to needs of the discipline. (see also: 8.2)

7.6.2 Write reviews of the new tests, instructional aids, and media for educational journals.

7.6.2.1 Write reviews of evaluation devices and procedures.

7.6.2.2 Write reviews of instructional aids.

7.6.2.3 Write reviews of educational media.

7.6.3 Develop written instructional materials for publication.

7.7 Supervise student-teachers.

7.7.1 Provide student-teachers with orientation to the school, classroom, and community.

7.7.1.1 Identify the student-teacher assignment.

7.7.1.2 Direct the student-teacher to written resources relative to the classroom, school, and community.

7.7.1.3 Recommend an interview with the cooperating-teacher and his university supervisor to the student-teacher.

7.7.1.4 Recommend a preliminary visit to the community by the student-teacher.

7.7.1.5 Be available to the student-teacher as a resource about the student-teaching assignment.

7.7.2 Prepare the class for the arrival of student-teachers.

7.7.3 Assign teaching responsibilities to the student-teacher.

7.7.3.1 Become acquainted with the student-teacher by studying his records and by conference with him.

7.7.3.2 Outline the student-teaching objectives to the student-teacher, differentiating between university and cooperating school requirements.

7.7.3.3 Make specific initial assignments which are manageable.

7.7.3.4 Make appropriate subsequent assignments of increasing responsibility which provide for meeting student-teaching objectives.

7.7.4 Create situations so that the student-teacher can initiate instructional activities.

7.7.5 Hold conferences with the student-teacher regarding his performance, progress, and problems.

7.7.6 Demonstrate effective techniques and methods for observation.

7.7.7 Observe student-teacher performance in the classroom.

7.7.8 Offer criticism, encouragement and suggestions in joint evaluation with the student-teacher.

7.7.9 Make formal evaluations of student-teacher performance.

7.7.9.1 Relate student teacher performance to student-teaching objectives specified in 7.7.3.2.

7.7.9.2 Complete records and reports required by the university.

7.7.9.3 Complete records and reports required by the cooperating school.

7.7.9.4 Write recommendations appropriate to the student-teacher's performance.

8.0 UTILIZE RESEARCH

8.1 Identify needs (problems) amenable to research.

8.1.1 Develop an awareness of the need for solving educational problems through research.

8.1.1.1 Recognize the limitations of solving problems by emotional response.

8.1.1.2 Recognize the advantages of making decisions on the basis of research evidence.

8.1.2 Identify causes and unfulfilled needs which contribute to classroom problems.

8.1.2.1 Maintain vigilance for classroom problems which might profit from treatment by research procedures.

8.1.2.2 Maintain records of problems so that recurrent problems can be readily identified.

8.1.3 Estimate and evaluate factors such as time, cost, and value as a basis for selection of research problems.

8.1.4 Review available research applicable to identified problem.

8.1.4.1 Make a key-word list.

8.1.4.2 Develop a system for note-taking and appropriate recording of bibliographical information.

8.1.4.3 Review formal research references (e.g.: theses, dissertations, ERIC resources, Jeldon abstracts, and the like)

8.1.4.4 Review informal references (e.g.: books, bulletins, periodicals, indexes, industrial resources, and the like)

8.1.4.5 Synthesize the review of formal and informal research into a carefully organized review of related literature.

8.2 Prepare proposals for researching a problem

8.2.1 Develop a concise statement of the research problem.

8.2.2 Write a rationale for the research study including a review of the literature.

8.2.2.1 Review selected related research.

8.2.2.2 Review selected related literature.

8.2.2.3 Write a rationale stating the underlying reason for the research problem.

8.2.3 Formulate objectives or hypotheses to be answered through research study.

8.2.3.1 State each objective to be met through the research study.

8.2.3.2 State the hypotheses to be tested through the research study.

8.2.4 Select and describe the research design to be used in a proposed research study.

8.2.4.1 Select the research design to be used.

8.2.4.2 Describe the research design to be used.

8.2.5 Select a population for a particular research study.

8.2.6 Select or develop an instrument appropriate to a research problem.

8.2.6.1 Select an instrument appropriate to the research problem and indicate the source.

8.2.6.2 Develop an instrument appropriate to the research problem.

8.2.6.2.1 Indicate the procedure to be used to develop the instrument.

8.2.6.2.2 Test the instrument.

8.2.7 Develop a management strategy for the control of the research study.

8.2.7.1 Review potential management strategies.

8.2.7.2 Synthesize a management strategy to be used.

8.2.8 Prepare a budget estimate in fiscal terms for the research study.

8.2.8.1 Identify items which will require expenditures.

8.2.8.2 Make time estimates for expenditure of funds.

8.2.8.3 Complete preparation of budgets.

8.2.9 Submit research proposal to appropriate funding bodies.

8.2.9.1 Make provisions to defend the proposal.

8.2.9.2 Make provisions for action upon acceptance.

8.2.9.3 Consider alternative funding agencies.

8.3 Conduct proposed research.

8.3.1 Collect research data by appropriate methods; e.g.: historical, descriptive, experimental.

8.3.1.1 Review appropriate procedures for the research method(s) chosen.

8.3.1.2 Proceed methodically according to the research design.

8.3.2 Analyze and interpret data collected for research studies.

8.3.2.1 Analyze data consistent with the research design.

8.3.2.2 Organize data into appropriate displays using consistent format.

8.3.2.3 Write an interpretive report of research data gathered using a consistent format.

8.3.3 Draw conclusions and project implications based on analysis of research data.

8.3.3.1 Summarize significant findings based on the interpretation of data presented.

8.3.3.2 Draw conclusions based on the evidence gathered.

8.3.3.3 Project implications of these findings and conclusions for the problem(s) addressed.

8.3.3.4 Make recommendations of further problems for investigation.

8.4 Write research reports.

8.4.1 Complete preparation of preliminary draft of research report: e.g.: introduction, methods, body, conclusions, implications, bibliography, appendices.

8.4.2 Formally review and revise preliminary draft of research report.

8.4.3 Complete final draft of research report.

8.5 Cooperate in research efforts of others.

8.5.1 Assist in implementation and evaluation of innovative programs.

8.5.1.1 Evidence an "open mind" to the ideas of others.

8.5.1.2 Accept responsibility commensurate with other assignments.

8.5.2 Assess and respond to educational research instruments.

8.5.3 Organize and set-up pilot programs in cooperation with other researchers.

8.6 Read and interpret research findings both as a consumer and as a researcher.

8.6.1 Read the research report and identify the major parts.

8.6.2 Inspect research reports for adequate descriptions of the major elements of the research study.

8.6.3 Evaluate the sampling procedures of research reports.

8.6.4 Assess the validity and reliability of research procedures.

8.6.5 Review the analysis of research data.

8.6.6 Evaluate the conclusions of a research report.

8.6.7 Determine potential application and usefulness of research findings to his own situation.

8.7 Apply the decision-making process to the solution of instructional problems.

8.7.1 Analyze potential courses of action applicable to needs (problems) as suggested by research results.

8.7.1.1 Review research evidence.

8.7.1.2 Identify possible courses of action.

8.7.1.3 Consider effects of each course of action.

8.7.2 Make decisions on courses of action to be taken based on research evidence.

8.7.3 Take action based on decision from research evidence by consulting those affected by the action and by informing others who need to know of the action taken.

8.7.4 Evaluate action taken based on research findings.

8.7.4.1 Develop an evaluation procedure based on research objectives.

8.7.4.2 Collect follow-up data.

8.7.4.3 Analyze research data.

8.7.4.4 Draw conclusions based upon research data.

8.7.4.5 Make changes based on conclusions from research findings.

9.0 EVALUATE INSTRUCTION

9.1 Assess whether students have assimilated the material presented.

- 9.1.1 Use the evaluation policy which was previously made known to students.
- 9.1.2 Determine whether students met performance standards. (See 9.4.5)
- 9.1.3 Apply methods to be used to evaluate instruction.

9.2 Construct and evaluate measuring instruments and procedures.

- 9.2.1 Devise self-evaluation techniques for use by students.
- 9.2.2 Formulate devices to measure cognitive (knowledge-type) behavior.
  - 9.2.2.1 Formulate written and other devices to measure cognitive behavior (See 3.7.3).
  - 9.2.2.2 Select an appropriate mix of test items to measure levels of learning in Bloom's Taxonomy (knowledge, comprehension, application, analysis, synthesis, evaluation).
  - 9.2.2.3 Evaluate students' behavior in terms of cognitive change related to Bloom's Taxonomy.
- 9.2.3 Formulate devices to measure affective behavior (e.g., attitudes, and values).
  - 9.2.3.1 Formulate written and other devices to measure affective behavior.
  - 9.2.3.2 Select an appropriate mix of test items to measure levels of learning in Krathwohl's Taxonomy (receiving, responding, valuing, organizing, characterizing).
  - 9.2.3.3 Evaluate students' behavior in terms of affective change related to Krathwohl's Taxonomy.
- 9.2.4 Formulate devices to measure psychomotor (manipulative skill type) behavior.
  - 9.2.4.1 Formulate devices to measure psychomotor behavior.
  - 9.2.4.2 Select an appropriate mix of items to measure psychomotor behavior according to Simpson's Taxonomy (perception, set guided responses, mechanism, complex or overt responses).
  - 9.2.4.3 Evaluate students' behavior in terms of psychomotor change related to Simpson's Taxonomy.

9.2.5 Develop pre-tests and post-tests.

9.2.5.1 Develop a set of test item specifications based upon behavioral objectives.

9.2.5.2 Decide upon appropriate mix of test items in the cognitive, affective, and psychomotor domains.

9.2.5.3 Select test items for pre-tests and post-tests.

9.2.6 Analyze test instrument validity and reliability.

9.2.6.1 Analyze internal validity.

9.2.6.2 Analyze external validity.

9.2.6.3 Analyze test instrument reliability.

9.2.7 Evaluate tests in terms of useability, objectivity, difficulty, and discrimination.

9.2.7.1 Select test items which show best performance in measuring behavioral changes in students.

9.2.7.2 Reject or re-write test items which perform below-standard.

9.2.7.3 Maintain balance of selected test items as outlined in table of specifications.

9.2.8 Use computer to assist in analyzing test results.

9.3 Administer evaluative experiences.

9.3.1 Administer pre-tests and post-tests.

9.3.2 Conduct student self-evaluation procedures.

9.3.3 Administer written and manipulative performance tests.

9.3.4 Maintain a daily instruction evaluation log book.

9.3.5 Administer standardized tests.

9.4 Determine efficiency and effectivness of instruction.

9.4.1 Analyze and interpret results of instructional measurement.

9.4.1.1 Provide statements which interpret norm-based evaluation.

9.4.1.2 Provide statements which interpret criterion-referenced evaluation.

9.4.2 Consult colleagues regarding assessment of your teaching.

9.4.3 Analyze student evaluation of instruction.

9.4.3.1 Provide a systematic method of obtaining student input.

9.4.3.2 Obtain input from student evaluations.

9.4.3.3 Analyze input for improvement purposes.

9.4.4 Compare pre-test and post-test results.

9.4.4.1 Note behavioral changes in cognitive, affective, and psychomotor domains.

9.4.4.2 Note areas of deficiencies in pre-test and post-test results

9.4.5 Appraise student performance in relation to instructional goals.

9.4.5.1 Review instructional goals.

9.4.5.2 Utilize results of test analysis to determine which goals have been accomplished.

9.4.5.3 Determine which goals have not been accomplished.

9.4.6 Determine whether students are generally happy with the instruction received.

9.4.6.1 Solicit student feedback about their satisfaction with the course.

9.4.6.2 Solicit feedback from parents about students' response to instruction.

10.0 EVALUATE PROGRAMS

10.1 Collect information at the program level.

10.1.1 Conduct program-level follow-up studies.

10.1.1.1 Design follow-up instrument to collect evaluation data.

10.1.1.2 Select population to participate.

10.1.1.3 Design reporting procedures.

10.1.1.4 Administer follow-up instrument.

10.1.1.5 Disseminate and utilize results to revise program.

10.1.1.6 Determine the reliability and validity of information collected.

10.1.2 Design and administer forms for evaluation of programs by students.

10.1.2.1 Design the form for program evaluation by students.

10.1.2.2 Select the populations to be evaluated.

10.1.2.3 Design methodology for reporting.

10.1.2.4 Administer evaluation instrument.

10.1.2.5 Disseminate and utilize the results.

10.1.3 Select (or design) and administer cognitive (knowledge) tests for evaluation of program.

10.1.3.1 Establish criteria and performance levels for graduates.

10.1.3.2 Select or design an evaluative instrument to measure cognitive knowledge and process skills.

10.1.3.3 Collect the data.

10.1.3.4 Analyze the data to include a reliability check.

10.1.3.5 Make decision to determine if graduates meet acceptable performance level.

10.1.4 Select (or design) and administer tests of attitudes for evaluation of the program.

10.1.4.1 Define the attitudes to be measured.

10.1.4.2 Determine the information or performance which will assess or reflect the attitudes.

10.1.4.3 Select or design the instrument to collect information.

10.1.4.4 Collect the data for measuring attitudes.

10.1.4.5 Analyze the data to include a reliability check.

10.1.4.6 Decide if the graduate meets the accepted standard.

10.1.5 Select (or design) and administer tests of psychomotor abilities for evaluation of program.

10.1.5.1 Establish psychomotor performance levels expected of graduates.

10.1.5.2 Select or design a psychomotor test to measure levels established.

10.1.5.3 Collect the data for measuring psychomotor abilities.

10.1.5.4 Analyze the data for measuring psychomotor abilities.

10.1.5.5 Make decision to determine if graduates meet acceptable levels or established standards.

10.1.6 Consult advisory committees to determine quality of instructional program.

10.1.6.1 Design a survey instrument to collect information from advisory committee.

10.1.6.2 Collect data from advisory committee to determine quality of instructional program.

10.1.6.3 Utilize advisory committee input to revise program.

10.1.7 Interact with and evaluate professional program-level curriculum viewpoints.

10.2 Assess factors influencing program.

10.2.1 Determine interests, abilities, and experiences of students entering program.

10.2.1.1 Assess student interest through formal and informal means.

10.2.1.2 Utilize standardized test results in determining student abilities.

10.2.1.3 Collect personal data pertaining to student's background.

10.2.2 Review teacher competencies with respect to program level goals.

10.2.2.1 Be aware of specific objectives of the program.

10.2.2.2 Be aware of teacher competencies.

10.2.2.3 Compare competencies of teachers with program objectives.

10.2.3 Review adequacy and utilization of facilities for program.

10.2.3.1 Assess learning activity needs in program courses.

10.2.3.2 Prepare a facilities utilization chart.

10.2.3.3 Compare activity needs to the facilities available.

10.2.4 Determine utilization made of community resources in program level development.

10.2.4.1. Identify areas where community resources could be used.

10.2.4.2 Identify community resources available.

10.2.4.3 Identify current usage of community resources.

10.2.4.4 Compare current usage with resources available and resources needed.

10.2.5 Determine the degree of articulation in general, college preparatory, and vocational programs.

10.2.5.1 Identify course sequences provided to fulfill the requirements of program tracks (college preparation, vocational, and general).

10.2.5.2 Identify the objectives of each course in each track.

10.2.5.3 Compare the objectives to the sequence in which they are taken.

10.3 Determine output characteristics of students.

10.3.1 Assess the degree of student achievement of program objectives.

10.3.1.1 Review program objectives.

10.3.1.2 Review evaluation procedure.

10.3.1.3 Apply evaluation procedure.

10.3.1.4 Compare student achievement level to achievement level desired.

10.3.2 Review program-level follow-up studies to ascertain usefulness of material learned.

10.3.3 Determine the degree to which the industrial education program satisfies societal, industry, and individual needs.

10.3.3.1 Identify the needs of society through analysis.

10.3.3.2 Identify the needs of industry through analysis.

10.3.3.3 Identify the needs of individuals through analysis.

10.3.3.4 Compare analysis data (society, industry, individuals) to the program objectives.

10.3.4 Compare present students' achievement with previous students' achievement in the programs.

10.3.5 Determine whether students enjoy the curriculum and are generally happy with it.

10.4 Determine effectiveness of program implementation.

10.4.1 Assess validity of original sources of curriculum content at the program level.

10.4.1.1 Utilize program level follow-up study to identify strengths and weaknesses of the program.

10.4.1.2 Decide whether weaknesses in the program are due to poor choice of original sources of curriculum content.

10.4.1.3 Decide whether new sources of content would improve the program.

10.4.2 Evaluate quality of instruction and teacher-student inter-relationships within the program.

10.4.2.1 Provide for student evaluation of the quality of instruction.

10.4.2.2 Provide for student input regarding teacher-student inter-relationship within the program.

10.4.2.3 Provide for peer evaluation of quality of instruction.

10.4.2.4 Provide for supervisor evaluation of quality of instruction.

10.4.3 Determine appropriateness of course objectives in fulfilling student needs at the program level.

10.4.3.1 Review program-level objectives.

10.4.3.2 Review course objectives.

10.4.3.3 Assess appropriateness of course objectives to meet requirements of program-level goals.

10.4.4 Assess adequacy of instructional materials for carrying out learning activities at the program level.

10.4.4.1 Review results of program evaluations.

10.4.4.2 Examine feedback for indications of faulty instructional materials.

10.4.5 Assess appropriateness of learning activities to the program.

10.4.5.1 Review results of program evaluations.

10.4.5.2 Examine feedback for indications of inappropriate learning activities.

10.4.6 Review sequences of courses comprising the program.